

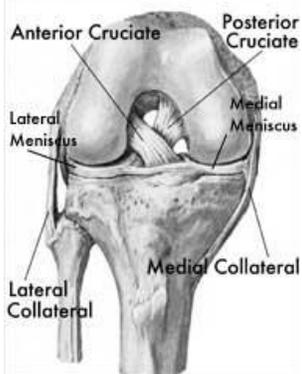
GOAL POST

ACL Injuries

by: **Dr. Trevor L. Hall, MD, CCFP, DIP. SPORT MED**

“I blew out my knee!” Have you ever yelled out this phrase? Knee injuries are very common in soccer players. One of the more serious injuries involves the **anterior cruciate ligament (ACL)**.

A **ligament** is a rope-like structure that holds two bones together. In your knee, there are four main ligaments (see Figure 1). The ACL acts to prevent the tibia (shin bone) from shifting forward in relation to the femur (thigh bone), and also helps to prevent rotational movements between these two bones.



Sports that involve a lot of **pivoting, stops and starts, landing jumps, and contact** between players have a higher risk of ACL injuries. Usually, if you tear your ACL, there is considerable pain, swelling that occurs quickly, and occasionally a “pop” sensation.

Figure 1: Knee Anatomy

A **physician** who has experience at diagnosing ACL injuries should be able to tell the extent of injury through physical examination. ACL tears can be a complete or partial (“stretching”). Sometimes special tests such as magnetic resonance imaging (MRI) are required to diagnose an ACL tear. X-rays are usually done to make sure that you have not sustained any bone injury.

The **initial treatment** of ACL tears involves measures to decrease the swelling such as frequent **icing** and using a non-steroidal anti-inflammatory medication (e.g., naproxen). **Physiotherapy** is very important in regaining your knee range of motion and preventing excessive muscle wasting. Often, the physician will prescribe a temporary brace for the first two weeks to

protect your knee. Once your knee starts to settle down, the physiotherapist will show you some particular **strengthening** (especially hamstring strength) and **balance exercises**, which are very important in the rehabilitation of your knee.

With appropriate treatment of an isolated ACL tear, your knee should be feeling good within 6 weeks (no pain or swelling because the inflammation has settled down). Unfortunately, the torn ACL does not usually heal or “tighten up”. Once an ACL is completely torn, it stays torn.

The big problem with this situation is that an ACL-deficient knee does not function properly. If you return to a contact sport or a sport with a lot of pivoting such as soccer, your knee will probably give out again (“blow out” your knee all over again). Every time your knee gives out (knee instability), you risk causing other damage to your knee such as cartilage tears and possibly **long-term problems** such as osteoarthritis. I have seen a twenty year-old soccer player with arthritis in her knee because she had undergone three years of instability episodes due to a chronic ACL tear without having her knee treated.

To try to prevent this knee instability, a physician can prescribe a special **custom-fit ACL brace**. This type of brace can be used on a daily basis in the rehab period and later to help to prevent knee instability in high risk situations such as pivoting or contact sports. In general, these braces are well-tolerated since they are custom-fit and made of strong light-weight materials such as titanium and carbon-fibre.

Depending on your sport or activity level, you may have to have **surgery to reconstruct your ACL**. Surgical reconstruction comes the closest to getting your knee back to normal. Some sports do not involve any pivoting (e.g., road cycling) so athletes in these sports probably will not need surgery (unless your knee gives out with daily activities which can sometimes happen!).

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Surgery is usually the best option for individuals who play soccer and other pivoting and contact sports. In the realm of sport injuries, ACL surgery is a fairly large procedure since the surgeon has to be skilled at this type of procedure. You have to be very dedicated to working hard at physiotherapy for several months after surgery, to help ensure a successful outcome.

In general, the earliest you can **return to contact & pivoting sports** after ACL surgery is six (6) months. Often, this period is closer to nine (9) months. Going back too early can result in re-injury since the reconstructed ACL will not be strong enough. Usually, you will be using the ACL brace after surgery, during the rehabilitation, and for the first year afterwards.

Although an ACL tear is a major injury, it is not the end of the world. With appropriate treatment, most players are able to return to the same level of activity they were at prior to injury.

Have a great season!



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Professor with McMaster U. Dept. of Family Medicine and is actively involved in training sports medicine PGY3 fellows. He has worked internationally with Canadian national teams and at Olympics, and currently is sports medicine consultant for U. of Waterloo varsity teams.

Tips & Tricks

Stay Hydrated

Staying hydrated throughout your workouts is essential for optimal performance. In a typical day it is recommended that you consume between 9 to 12 cups of fluids (approx. 2.5 liters). This includes water, milk, and 100% fruit juice. Water is best for hydration. On days that are hot and humid, or if you will be exercising, the recommendations increase. In addition to the 2.5 liters per day you should also be drinking roughly 125-250 mL every 15 minutes of exercise. The amount of fluids you need during exercise is dependent on several factors, including how much you sweat, therefore, it may be helpful to weigh yourself pre and post exercise and rehydrate by drinking 500 mls for every pound lost during exercise.



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Let's Get 'HUMERUS'

A match between two non-league teams took place last winter in the North of England. It had been raining heavily all week and the ground resembled a swamp.

However, the referee ruled that play was possible and tossed the coin to determine ends.

The visiting captain won the toss and, after a moment's thought, said, "OK – we'll take the shallow end!"

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